

§ 179.22

shell, the connections must be designed, constructed, and protected according to paragraphs E9.00 and E10.00 of the AAR Specifications for Tank Cars, M-1002.

[Amdt. 179-50, 60 FR 49077, Sept. 21, 1995]

§ 179.22 Marking.

In addition to any other marking requirement in this subchapter, the following marking requirements apply:

(a) Each tank car must be marked according to the requirements in Appendix C of the AAR Specifications for Tank Cars.

(b) Each tank car that requires a tank-head puncture-resistance system must have the letter "S" substituted for the letter "A" in the specification marking.

(c) Each tank car that requires a tank-head puncture-resistance system, a thermal protection system, and a metal jacket must have the letter "J" substituted for the letter "A" or "S" in the specification marking.

(d) Each tank car that requires a tank-head puncture-resistance system, a thermal protection system, and no metal jacket must have the letter "T" substituted for the letter "A" or "S" in the specification marking.

[Amdt. 179-50, 60 FR 49077, Sept. 21, 1995, as amended by Amdt. 179-50, 61 FR 33256, June 26, 1996]

Subpart C—Specifications for Pressure Tank Car Tanks (Classes DOT-105, 109, 112, 114 and 120)

§ 179.100 General specifications applicable to pressure tank car tanks.

§ 179.100-1 Tanks built under these specifications shall comply with the requirements of §§ 179.100, 179.101 and when applicable, §§ 179.102 and 179.103.

§ 179.100-3 Type.

(a) Tanks built under this specification shall be fusion-welded with heads designed convex outward. Except as provided in § 179.103 they shall be circular in cross section, shall be provided with a manway nozzle on top of the tank of sufficient size to permit access to the interior, a manway cover to pro-

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vide for the mounting of all valves, measuring and sampling devices, and a protective housing. Other openings in the tank are prohibited, except as provided in part 173 of this chapter, §§ 179.100-14, 179.101-1, 179.102 or § 179.103.

(b) [Reserved]

[29 FR 18995, Dec. 29, 1964. Redesignated at 32 FR 5606, Apr. 5, 1967, and amended by Amdt. 179-10, 36 FR 21344, Nov. 6, 1971; 65 FR 58632, Sept. 29, 2000]

§ 179.100-4 Insulation.

(a) If insulation is applied, the tank shell and manway nozzle must be insulated with an approved material. The entire insulation must be covered with a metal jacket of a thickness not less than 11 gauge (0.1196 inch) nominal (Manufacturers' Standard Gauge) and flashed around all openings so as to be weather-tight. The exterior surface of a carbon steel tank, and the inside surface of a carbon steel jacket must be given a protective coating.

(b) If insulation is a specification requirement, it shall be of sufficient thickness so that the thermal conductance at 60 °F is not more than 0.075 Btu per hour, per square foot, per degree F temperature differential. If exterior heaters are attached to tank, the thickness of the insulation over each heater element may be reduced to one-half that required for the shell.

[29 FR 18995, Dec. 29, 1964. Redesignated at 32 FR 5606, Apr. 5, 1967, and amended by Amdt. 179-10, 36 FR 21344, Nov. 6, 1971; Amdt. 179-50, 60 FR 49077, Sept. 21, 1995]

§ 179.100-6 Thickness of plates.

(a) The wall thickness after forming of the tank shell and heads must not be less than that specified in § 179.101, nor that calculated by the following formula:

$$t = Pd / 2SE$$

Where:

d = Inside diameter in inches;

E = 1.0 welded joint efficiency; except for heads with seams=0.9;

P = Minimum required bursting pressure in p.s.i.;

S = Minimum tensile strength of plate material in p.s.i., as prescribed in § 179.100-7;

t = Minimum thickness of plate in inches after forming.